

CLAIMS

1. A substrate for a liquid crystal device being one of a pair of substrates having a liquid crystal layer interposed therebetween, located on the side opposite to the viewer,

5 wherein the surface on the side of the liquid crystal layer comprises a planar region and a roughened region comprising microscopic peaks and valleys, and

the heights of the tops of the peaks in the roughened region are equal to or lower than the level of the plane including the planar 10 region.

2. The substrate for a liquid crystal device according to Claim 1, wherein a predetermined mark is formed in the planar region.

15 3. The substrate for a liquid crystal device according to Claim 2, wherein the predetermined mark is an alignment mark.

4. The substrate for a liquid crystal device according to Claim 2, wherein the predetermined mark is a process control mark.

20 5. The substrate for a liquid crystal device according to Claim 1, wherein wiring is formed in the planar region.

6. The substrate for a liquid crystal device according to Claim 1, 25 wherein a sealant is formed in the planar region.

7. The substrate for a liquid crystal device according to any one of
Claims 1 to 6, wherein the maximum height Ry, the arithmetic mean
roughness Ra, the ten-point average roughness Rz, and the mean
5 wavelength Sm in the roughened region are in predetermined ranges.

8. The substrate for a liquid crystal device according to Claim 7,
wherein the maximum height Ry is set at 0.2 to 3 μm , the arithmetic mean
roughness Ra is set at 0.02 to 0.3 μm , the ten-point average roughness
10 Rz is set at 0.1 to 2.5 μm , and the mean wavelength Sm is set at 4 to 60
 μm .

9. The substrate for a liquid crystal device according to Claim 7,
wherein the maximum height Ry is set at 1.5 to 2.0 μm , the arithmetic
15 mean roughness Ra is set at 0.15 to 0.3 μm , the ten-point average
roughness Rz is set at 1.3 to 1.8 μm , and the mean wavelength Sm is set
at 15 to 25 μm .

10. The substrate for a liquid crystal device according to Claim 7,
20 wherein the maximum height Ry is set at 0.7 to 1.2 μm , the arithmetic
mean roughness Ra is set at 0.1 to 0.2 μm , the ten-point average
roughness Rz is set at 0.5 to 1.0 μm , and the mean wavelength Sm is set
at 35 to 50 μm .

25 11. The substrate for a liquid crystal device according to Claim 7,

wherein the maximum height R_y is set at 0.6 to 1.2 μm , the arithmetic mean roughness R_a is set at 0.05 to 0.15 μm , the ten-point average roughness R_z is set at 0.5 to 1.0 μm , and the mean wavelength S_m is set at 15 to 25 μm .

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12. The substrate for a liquid crystal device according to Claim 7, wherein the maximum height R_y is set at 0.4 to 1.0 μm , the arithmetic mean roughness R_a is set at 0.04 to 0.10 μm , the ten-point average roughness R_z is set at 0.3 to 0.8 μm , and the mean wavelength S_m is set at 8 to 15 μm .

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13. The substrate for a liquid crystal device according to Claim 7, wherein the maximum height R_y is set at 0.8 to 1.5 μm , the arithmetic mean roughness R_a is set at 0.05 to 0.15 μm , the ten-point average roughness R_z is set at 0.7 to 1.3 μm , and the mean wavelength S_m is set at 8 to 15 μm .

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14. The liquid crystal device comprising a liquid crystal layer interposed between a substrate for a liquid crystal device according to any one of Claims 1 to 13 and another substrate.

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15. The electronic apparatus comprising a liquid crystal device according to Claim 14.

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16. A method for fabricating a liquid crystal device comprising a liquid crystal layer interposed between a pair of substrates, comprising

the steps of:

covering, by a mask, a portion of the liquid crystal layer side surface of one of the substrates located opposite to the viewer;

5 roughening a region of the surface other than the region covered by the mask to form a roughened region having microscopic peaks and valleys, wherein the heights of the tops of the peaks are equal to or lower than the level of the plane including the region covered by the mask; and bonding the pair of substrates together so that the roughened region is opposed to the other substrate.

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17. The method for fabricating a liquid crystal device according to Claim 16,

15 wherein said one of the pair of substrates contains a first composition which is network-shaped and a second composition located in spaces of the network of the first composition, and

when roughening is performed, by etching the substrate using a treatment solution having different dissolution rates for the first composition and the second composition, the peaks and valleys in response to the shape of the first composition are formed in the region 20 other than the region covered by the mask.

18. The method for fabricating a liquid crystal device according to Claim 16, wherein when roughening is performed, granular members are made to impact the surface of said one of the substrates through the 25 mask so that the peaks and valleys are formed in the region other than

the region covered by the mask.

19. The method for fabricating a liquid crystal device according to any one of Claims 16 to 18, wherein after roughening is performed, the
5 mask is removed and the region which had been covered by the mask and the roughened region are subjected to etching.

20. A method for fabricating a substrate for a liquid crystal device, the substrate being one of a pair of substrates having a liquid crystal layer interposed therebetween, located on the side opposite to the
10 viewer, comprising the steps of:

covering a portion of the liquid crystal layer side surface by a mask; and

15 roughening a region of the surface other than the region covered by the mask to form a roughened region having microscopic peaks and valleys, in which the heights of the tops of the peaks are equal to or lower than the level of the plane including the region covered by the mask.

21. The method for fabricating a substrate for a liquid crystal
20 device according to Claim 20, wherein said one of the substrates contains a first composition which is network-shaped and a second composition located in spaces of the network of the first composition, and

25 when roughening is performed, by etching said one of the substrates using a treatment solution having different dissolution rates for the

first composition and the second composition, the peaks and valleys in response to the shape of the first composition are formed in the region other than the region covered by the mask.

5 22. The method for fabricating a substrate for a liquid crystal device according to Claim 20, wherein when roughening is performed, granular members are made to impact the surface of said one of the substrates through the mask so that the peaks and valleys are formed in the region other than the region covered by the mask.

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23. The method for fabricating a substrate for a liquid crystal device according to any one of Claims 20 to 22, wherein after roughening is performed, the mask is removed and the region which had been covered by the mask and the roughened region are subjected to etching.

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ATTACHMENT FOR CLAIM AMENDMENTS

Attorney Docket No. 9319S-000178

(underlines indicate insertions and brackets indicate deletions)

7. (AMENDED) The substrate for a liquid crystal device according to Claim 1 [any one of Claims 1 to 6], wherein the maximum height Ry, the arithmetic mean roughness Ra, the ten-point average roughness Rz, and the mean wavelength Sm in the roughened region are in predetermined ranges.

14. (AMENDED) The liquid crystal device comprising a liquid crystal layer interposed between a substrate for a liquid crystal device according to Claim 1 [any one of Claims 1 to 13] and another substrate.

19. (AMENDED) The method for fabricating a liquid crystal device according to Claim 16 [any one of Claims 16 to 18], wherein after roughening is performed, the mask is removed and the region which had been covered by the mask and the roughened region are subjected to etching.

23. (AMENDED) The method for fabricating a substrate for a liquid crystal device according to Claim 20 [any one of Claims 20 to 22], wherein after roughening is performed, the mask is removed and the region which had been covered by the mask and the roughened region are subjected to etching.